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A PILOT RESEARCH STUDY OF ART FACILITIES IN SIX COLLEGES AND UNIVERSITIES.

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EDUCATIONAL FACILITIES, *FACILITY EXPANSION, *ART ACTIVITIES, *ART EDUCATION, *SURVEYS, *PLANNING, NEW YORK UNIVERSITY, BROOKLYN, NEW YORK, SARAH LAWRENCE COLLEGE, CLEVELAND INSTITUTE OF ART, MASSACHUSETTS INSTITUTE OF TECHNOLOGY, UNIVERSITY OF MICHIGAN

THE PURPOSE OF THIS PROJECT WAS TO DEFINE SOME OF THE ISSUES THAT UNDERLINE CURRICULAR AND SPACE DECISION MAKING IN THE VISUAL ARTS AND TO MAKE CONSTRUCTIVE OBSERVATIONS THAT MAY SERVE AS GUIDELINES. VISITS OF A WEEK OR TWO TO EACH OF THE SIX INSTITUTIONS WERE MADE AND INTERVIEWS CONDUCTED WITH ADMINISTRATORS, TEACHERS, AND STUDENTS. OF THE SIX INSTITUTIONS STUDIED, THE CLEVELAND INSTITUTE OF ART HAS ACHIEVED A PHYSICAL PLANT IT CONSIDERS ADEQUATE FOR ITS NEEDS NOW AND IN THE FORESEEABLE FUTURE. NEW YORK UNIVERSITY, MASSACHUSETTS INSTITUTE OF TECHNOLOGY, AND THE UNIVERSITY OF MICHIGAN HAVE PERMANENT LONG-RANGE PROFESSIONAL PLANNING DEPARTMENTS. PRATT INSTITUTE HAS A NEWLY HIRED STAFF MEMBER, AN ARCHITECTURAL CONSULTANT, WHO IS ATTEMPTING TO EVALUATE SPACE NEEDS AND PREPARE RECOMMENDATIONS FOR AN ALREADY APPOINTED ARCHITECTURAL FIRM TO CONSIDER. SARAH LAWRENCE HAS RETAINED THE CONSULTANT SERVICES OF A WELL-KNOWN CAMPUS PLANNER. (GC)

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Painting studio,
New York University

Sculpture studio,
Pratt Institute

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by E. M. Benson

Left, top to bottom

Fabric printing workshop,
Cleveland Institute of Art

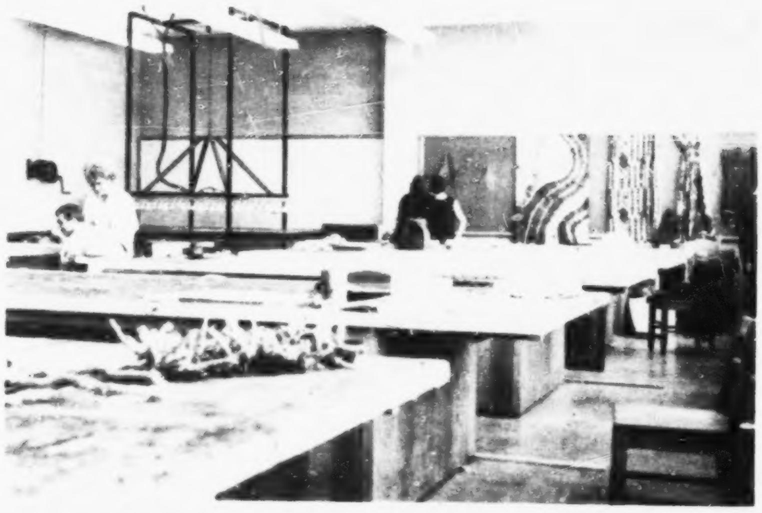
Visual studies photo studio, MIT

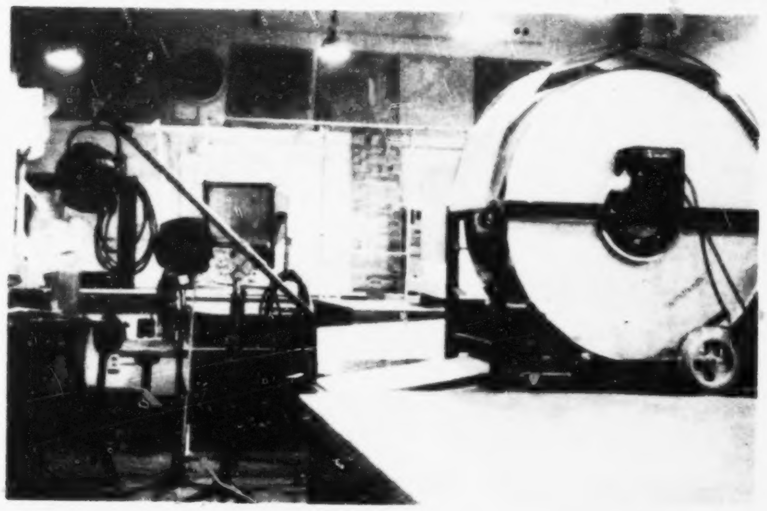
Printmaker Uchima in his department,
Sarah Lawrence College

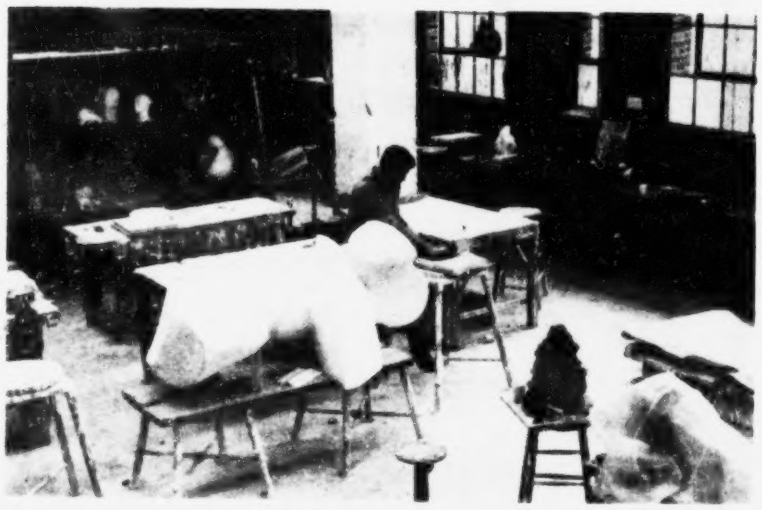
Sculpture studio, University of Michigan

Right, top and bottom

Student cubicles, Cleveland
Multipurpose classroom, Michigan







A PILOT RESEARCH STUDY OF ART FACILITIES IN SIX COLLEGES AND UNIVERSITIES

Cleveland Institute of Art
Massachusetts Institute of Technology
New York University
Pratt Institute
Sarah Lawrence College
University of Michigan

United States Office of Education
Humanities Branch - Project No. 6-1281
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PREFATORY NOTE

Visits of a week or two to each of six institutions of higher learning are not likely to make for comprehensive judgments. It is not too difficult, however, even in a short time, to gain certain meaningful insights; to ferret out the attitudes that have colored the instructional programs in the visual arts and the thinking that has gone into planning for future spaces and facilities. In this report we have tried to define some of the issues that underlie curricular and space decision-making in the visual arts and to make constructive observations that may serve as guidelines.

This report was prepared with the help of my wife, Elaine K.G. Benson, who kept a complete record of all conversations. We have used only a few of many photographs we took at the six institutions studied. The best of the unused ones, hopefully, will be included in another, larger research effort that will follow.

E.M.B.

INTRODUCTION

The President of one of the six institutions surveyed in this pilot study commented sharply about his academic associates: "Whenever I have asked them to tell me what their most urgent needs are, they invariably request twice the space they now have. What we need and have never had, - perhaps because we are not willing to pay the price in time and effort, - is a searching analysis of the concepts that underlie our teaching programs. Until this is done we can't possibly define with any insightful authority the quality and quantity of the physical spaces required to create a responsive environment for students of diverse interests and career objectives."

If most college presidents were to be able to speak their minds freely they would admit that among the factors that deter planful and considered solutions to space requirements are the following: (1) the difficulty of the average teacher to step outside the safety zone of his ego and career security long enough to look freshly at emergent ideas that pertain to the learning process; (2) the insinuating and sometimes restraining influence of such pressure groups as public officials, who may set arbitrary standards without adequate grasp of the total educational situation, trustees and alumni who often prefer to keep things as they were, and the protective, myopic parochialism of some professional organizations more concerned with the practical relationship of knowledge to profits than with the humanistic responsibilities of professional practice; (3) the opportunistic acrobatics of some college administrators responding too readily to the presumed urgencies of "real politik" encompassed by such enterprises as fund raising and sponsored research. The effect of all this machination is that spaces are often assigned on the basis of what seems a mystical priority only fully intelligible to donors of major gifts and a few college officials.

Not infrequently there are building plans somewhere, the product of months of faculty-administration conference, aided perhaps by a small encouraging grant from a foundation, but now outdated or displaced by newer and second-thought versions. On close examination one may find that these plans are soundly and sensibly sequenced to accommodate specialized needs and departmental growth. These calculations occasionally include imaginative, chance-taking ideas that could create exciting answers to space needs. Discouragingly often these plans get altered by circumstance, most often economic, sometimes politic. By the time the accommodations, so desperately needed, are finally made available, it no longer seems reasonable to quibble over the inadequacies. If this results in a please-don't-involve-me cynicism, it is because group dreams find survival difficult on college campuses where so many people and forces are in competition.

It should therefore come as no surprise that long range thinking and planning in the visual arts, the subject of this report, can be described as fragmentary. Although special task forces have, from time to time, been assigned by most colleges to compile data on environmental, curricula and learning factors in the visual arts, it is questionable whether future buildings will be significantly influenced by these guidelines. Powerful personalities generally play a more decisive role than abstract ideas, no matter how salient or vital the ideas may be, unless, as sometimes happens, the personalities and ideas are combined in the same individuals.

In general, college faculty members and administrators are so fully absorbed in their day-to-day responsibilities they haven't much time or energy for speculation on factors relating to predicted changes in the learning process or the spaces that will be required in the decades to come. If their classrooms and offices are relatively adequate, their salaries competitively acceptable and moving upward, and they are respected by a sufficient number of their colleagues, it is likely they won't look for additional problems to solve outside the magic circle of their own professional interests.

So the planning at most colleges is left to a few people who plug away as best they can, prodding, sounding alarms, calling reluctant confreres to urgent meetings, and hoping that enough people will be willing to think about the issues long enough to come up with sound answers. And, since few institutions can afford a long-range planning staff, many building ideas and schemes of action are put together under pressure by well-meaning amateurs.

Of the six institutions studied, one, the Cleveland Institute of Art, has achieved a physical plant it considers adequate for its needs now and in the foreseeable future; three, NYU, MIT and Michigan, have permanent long-range professional planning departments; one, Pratt Institute, has a newly hired staff member, an architectural consultant, attempting to evaluate space needs and prepare recommendations for an already appointed architectural firm to consider; and one, Sarah Lawrence, has retained the consultant services of a well-known campus planner.

In every case of college planning, it is crucially important that faculty and administration supply the basic information and concepts for planners to translate into structures. It is easy to ask for more of whatever one has without really facing the ever-puzzling question of inevitable curricular changes that can completely upset conventional space planning. The difficult task for faculty and staff is to look beyond the boundaries of the present to the still indistinct landscape of the future.

I. CLEVELAND INSTITUTE OF ART -Cleveland, Ohio. Private, co-educational. Founded 1882. Enrollment: 650. Faculty: 45. Library: 16,000 volumes, 90,000 mounted photographs and pictures. New $3,000,000 building in University Circle across from Cleveland Museum of Art. Director: Joseph McCullough.

II. MASSACHUSETTS INSTITUTE OF TECHNOLOGY -Cambridge, Mass. Independent, co-educational. Founded 1862. Enrollment 7,000 (3,500 undergraduate, 3,500 graduate). Total faculty: 1,500. Libraries: holdings in excess of 896,000 volumes, 7,000 current journals and serials. Campus faces Charles River, includes residences and instructional buildings. President: Dr. Howard Johnson; Dean, School of Architecture: Dr. Lawrence Anderson; Chairman, Visual Arts: Professor Gyorgy Kepes.

III. NEW YORK UNIVERSITY -Washington Square, New York City. Private, co-educational. Founded 1831. Enrollment: 42,000. Faculty: 4,900. Libraries: 1,500,000 volumes. 14 Colleges, Schools, Divisions at 5 major centers in New York City and the Bronx. President: Dr. James M. Hester; Chairman, Art Education: Dr. Howard M. Conant.

IV. PRATT INSTITUTE -Brooklyn, New York. Independent, co-educational. Founded 1878. Enrollment: 5,000 students. Faculty: 425. Library: 190,000 bound volumes, 20,000 slides, 50,000 pictures and prints. 18 acre campus. President: Dr. Richard H. Heindel; Dean, The Art School: Dr. Albert Christ-Janer.

V. SARAH LAWRENCE COLLEGE - Bronxville, New York. Private, residential liberal arts college for women. Founded 1924. Enrollment: 550. Faculty: 87. Library: 93,000 bound volumes; 14,000 catalogued pamphlets, 1950 microfilm rolls. Campus: 23 acres. President: Mrs. Esther Raushenbush. Senior member of Art Department: Kurt Roesch.

VI. UNIVERSITY OF MICHIGAN -Ann Arbor, Michigan. State University, co-educational. Founded 1817. Enrollment: 30,000. Faculty: 3,000. Libraries: General library has 1,400,000 volumes, 41% of University's holdings. Two campuses occupying considerable part of town of Ann Arbor. President: Dr. Harlan Hatcher. Chairman, Department of Art: Robert I. Iglehart.

I. CLEVELAND INSTITUTE OF ART

The first impression of the Cleveland Institute of Art is of an unpretentious but handsome modern building with more studio space per student than at any art school in America. Strategically situated in University Park within easy walking distance of the Art Museum, Symphony Hall and Western Reserve University, it is difficult to imagine a more attractive and practical location for an art school.

A minority opinion was expressed that the new $3,000,000 physical plant is cold and unexciting. The feeling of the Director* is that the building "works" superbly and is satisfactory aesthetically and functionally. Interestingly, this was the only one of the six schools visited where the administration expressed justifiable satisfaction with either space or facilities.

Fewer than 400 students distribute themselves comfortably in the spacious three floor building. The exhibition gallery is luxurious and attractively planned to provide maximum security with minimal personnel. It provides a showcase for the community to which its exhibits are generously open, and offers students the opportunity to evaluate and learn from constantly changing shows. Modest tuition and an excellent teaching staff make the school one of the best buys in Ohio, from which it draws most of its students.

One might assume from the look of the school and its facilities that it has everything it needs. Its lack of accrediation, for which it has never applied, has little bearing on the quality of its performance. It is a significant lack, though, from a long-range point of view, because accreditation would very likely help to strengthen the faculty salary structure, make possible the employment of more full-time teachers, expand the offerings in art history, and perhaps encourage the Institute to offer a larger core of humanistic studies. It would also influence, to some extent, the number and quality of students applying for admission.

The Institute's leadership is sound, knowing, patient yet firm, but it seems, in some ways, to stifle ferment and feed-

*Joseph McCullough

back, perhaps as a safeguard against possible trustee response. There is a "Why rock the boat?" attitude here that almost precludes the excitement of a storm at sea, but insures a direct route to a safe harbor. While the student work is competent and, sometimes, surprisingly mature it may lack vision and the kind of impetuosity that is hard to harness when the cultural climate is responsive to experiment and less rooted in convention.

At the University of Michigan, the Vice President in charge of Student Affairs recently wrote a widely publicized letter to an alumnus donor who had protested the offbeat appearance of some of the students, defending the right to dissent as a prerogative of the student who can, perhaps, use his appearance as a form of wholesome revolt before full responsibility moves in on him. At Cleveland there is no such permissive attitude. The bearded beatnik or counterpart is given a fatherly lecture, brought into line with the word that artists should express themselves in their work rather than in their getup. A mild statement of disagreement with this sort of paternalism was expressed by one of the more sophisticated students who, having attended an elite Eastern University prior to deciding to become an artist, felt that, "The atmosphere here is somewhat smothering. No one is much involved with what's happening in Vietnam. There is not enough protest. It's all a little too homogenous to be stimulating."

Nevertheless there is ample evidence that the Cleveland Institute of Art has much that other colleges could regard with envy: Well equipped studios; spacious corridors; sufficient natural and artificial lighting throughout the building; a roomy cafeteria in which to eat or talk or study; pleasantly furnished lounges that double as additional exhibition areas.

Also commendable is the wide diversity of faculty talent. The printmaking area is directed by a widely respected artist who regards his profession with a convincing depth of conviction. In graphic design the able and enlightened faculty members, successful designers themselves, have wisely related the department to public service activities in Cleveland, and teams of students learn to work with actual design problem-solving.

In superb studio space that includes shops for wood, metal, plaster and plastics, a conscientious effort is being made to work organically and structurally rather than from a surface styling point of view. The director expressed the view that industrial designers have a moral responsibility to participate in creating higher standards of public taste as well as to design more attractive products and places. If there is any instructional limitation here it is primarily the student's need, but lack of time, to know more about the more complex engineering and architectural aspects of what they are trying to do. A four year program does not, apparently, offer enough time to prepare a product designer for his profession as thoroughly as it might.

Cleveland was fortunate, at the time of our visit, to have an Hawaiian born American of Japanese ancestry as the ceramist in charge of its beautifully spacious and well equipped ceramic workshops. Here are kilns able to hold fairly large pieces of ceramic sculpture and students respond to their environment boldly by making some excitingly brave pieces. Potters wheels, drying and glazing spaces are well kept, but not overly manicured. And there are interspersed, in an unself-conscious way throughout the area, rocks and plants, shells, and other nature forms for the students to look at and learn from. Incidentally, the ceramic department is close to the sculpture studios on the ground level of the Art Institute and this proximity fosters a healthy interchange of ideas.

The Institute offers a major in fabric design, and instruction includes extensive facilities for weaving and screen printing, courses not available at any of the other five institutions studied. Visiting the school as instructor was a specialist in batik printing who heads a school in her native India. The department director is a gifted Swedish weaver whose classic training was received in Stockholm. The Art Institute's textile program is strong despite the fact there is no significant textile industry in Cleveland where students might be apprenticed or hope to become employed. This situation tends to minimize classroom interest in the power loom, in machine printing processes and how to translate textile handicraft to mass production with the least loss of quality. Nor is there any investigation of new man-made fibers and laminates that offer challenging opportunities to the textile designer.

Student work in painting is unusually strong, varied in style and technique and with a solid sense of structure. While there are few examples of experimental or offbeat work that reflected current faddist attitudes, we have seen nothing better anywhere. Also, the Institute is probably the only school in the country where a strong program in portraiture is still part of the painting curriculum.

The sculpture studios are breathtaking in size and facility. No school can match them. The work in wood, stone and metal seems somewhat bolder and more inventive than the painting.

Photography, the youngest department in the school, is beginning to attract more students, but evaluation of its efforts would be premature. Its new spaces and facilities, planned with the help of experts, offer fine working conditions.

It is hoped that filmmaking soon will be added to the instructional program. Although students in the Graphic Design department have occasionally used the movie camera to complete classroom assignments, this was done completely on their own.

At the present time all of the Art History courses are being taught by one extremely literate, able but overworked woman whose pitifully small spare time was spent trying to research and prepare slides to illustrate her lectures. The slide collection is somewhat meager compared with most institutions, but the library, which boasts approximately 90,000 mounted photographs and prints, has a volume count of 16,000 and is comparable in size to similar private art schools.

Because of lack of space, the Art Institute's neighboring institution, Western Reserve University, conducts all of its art history courses in the Cleveland Museum of Art across the street, using some of the Museum's excellent curators as faculty. Art Institute students are encouraged to use the Museum as much as possible, but in a meeting with a group of students we learned that most of them get so caught up in their own work that they rarely take the time to explore the Museum's treasures. This is unfortunately true of a great many students at a great many institutions, explainable possibly because of heavy schedules, or as one student put it, "It depresses me to compete with all those geniuses."

What this school has in superb quantity and quality is what most students want more than almost anything else: space and facilities. What seems lacking is a kind of cultural carbonation. Certainly the students are no less or more talented than other students. Their teachers are no less or better qualified than at other schools. Is it possible that Cleveland's classically gray cloudy skies make for cautious traveling?

What is likely to take place at the Art Institute during the next decades? The architectural spaces will probably remain precisely what they are unless the number of students enlarges greatly, which is unlikely since the administration is reluctant to have the school become much bigger. Art history will undoubtedly be taught by several people, and more of it will be given to each student, with some choice of seminar courses in the senior year. With accreditation will come the changes that were suggested earlier in the report. The graduate program will be enlarged and strengthened to include all the major areas. It is hoped that the school will become more interested in stressing art education as a profession and train more artists for this important career.

What the Cleveland Institute of Art may have to face is the fact that the world has changed significantly in the age of instantaneous computers that can do a year's manual work in a few seconds. Or maybe it can remain a strong little island, self-sufficient and unimpressed with jet age shenanigans.

II. MASSACHUSETTS INSTITUTE OF TECHNOLOGY

The Massachusetts Institute of Technology is full of students in a hurry. Driven to become what they need to be, they charge full speed ahead, diverted by very little. Competitive primarily with Harvard,* it would seem that although the Institute is aware that it is "elite" intellectually, it is somewhat self-conscious that it may be lacking in the sophistication of some Ivy institutions. In the words of one candid Professor, "The Institute is Dodge City culturally, a frontier town. But we're headed in the right direction, and when we move we move fast."

Architecturally MIT is an interconnected hodge-podge although its relatively new planning department is doing what it can to insure that future buildings are both soundly thought out and aesthetically achieved. The newer buildings give promise that the future campus will have less of a factory-town look.

At MIT, as at Rensselaer Polytechnic Institute, the planning people believe that no one department should have exclusive jurisdiction over any part of any building. The spaces are designed to house a number of instructional processes and the institution reserves the right to determine how these are to be allocated based, of course, on the carefully defined requirements that are evolved collaboratively between planning office and department chairmen. The inference is that power politics is the least good way to assign spaces. The planning director at MIT made it clear that flexible as well as fixed spaces are needed so that they can be juggled to suit changing situations.

The initial aesthetic stimulus provided by Professor Gyorgy Kepes at MIT over the past two decades had grown almost imperceptibly, and then, the cultural climate became propitious and a burgeoning has begun that shows promise of greater growth in the years ahead. The program in visual studies at MIT has had consistently strong administrative support and the respectful regard of the faculty. Offered at first to architecture and art history majors and subsequently as an elective for everyone, this program has pioneered a new focus in understanding the arts of our time with particular emphasis on their relation to the sciences.

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* No fewer than three of the people we interviewed told us that in MIT's freshman class College Board scores last year averaged slightly higher than Harvard's.

Because the pursuit of visual studies developed in the unusual setting of an institution devoted mainly to the sciences, new instructional attitudes and procedures were required. Kepes, and the able colleagues who have joined him, gradually evolved which issues might be most fruitfully explored by students in this setting.

Classroom workshop spaces used for the visual arts seem minimally satisfactory. There is a shop with power tools used primarily by architectural students and some photo equipment used largely for processing and for experimental work in lighting. Somewhere in the master blueprint of several years hence a new building is in the offing, but space for the sciences and engineering and for student housing have present priorities in the Institute's already formulated 15 to 20 year plan.

The architecture and art history majors have had the benefit of the stimulation of the visual art program as have the limited number of science and engineering students who have elected Dr. Robert Preusser's undergraduate course. Unfortunately, relatively few of these students feel that they have time to take advantage of this offering. Highly motivated towards success in their specializations, these students are reluctant to be deflected, even momentarily, from their career objectives.

This success syndrome, inbred during pre-college years by such highly selective admission requirements as those of MIT, has produced students who willingly lock themselves into a system that is most likely to produce career success. Several factors may gradually alter this rigid, almost neurotic pattern. The administration view is that involvement in the arts and in the creative act are more and more essential to personal and professional fulfillment. Students will get the message.

Among the signs that point to a broadening horizon for the visual arts at MIT are: (1) the planned-for extension of current courses in visual studies to both undergraduate and graduate degree major status; (2) the appointment of Minor White as head of the new photographic department; (3) the about-to-be-realized Center of Advanced Visual Studies planned by Professor Kepes which will bring together small groups of artists who will be able to pursue their work in studios that invite experiment; (4) the possibility that MIT will relax admission requirements to give favorable consideration of high school art experience.

In conversations with representatives of the Office of Admissions and the Dean of Students it was convincingly clear that they are determined to create an environment that will make for a better cultural mix where many more opportunities are offered for student involvement in the arts, either as part of the curriculum or on a non-credit basis. It was explained that dormitories are now being designed to include art workshops open to resident students at all times. Extra curricular events - film showings, guest lectures on the arts, and classes in painting and sculpture are already regularly sponsored. Also, the more recent architectural additions to the Institute, such as the Saarinen-designed auditorium and chapel, and the more formal somewhat controversial Student Union building by architect Professor Catalano have greatly improved the look of MIT and offer the students a valuable daily experience with contemporary forms.

Favorable indication of increasing student interest in studio workshops in the visual arts is the response to the new photography program started in September, 1965, and oversubscribed from its first days. An impressive exhibition of student work was on view at the time of our visit. Perhaps it is the technical aspect of photography that at first drew students to these classes. No doubt they soon learned that the selective eye is a creative not a mechanical instrument. It should also be obvious that Professor Edgerton's widely known experiments at MIT in high-speed, stop motion photography combines as much art as science and that the boundary lines between both are often indistinct. Uccello's studies of perspective in the 14th century and Muybridge's more recent photo experiments with the movement of animals and people have served to fuse research and revelation in a single artistic act.

It is fascinating to observe how the special character of each institution engages its faculty in finding indigenous solutions that have an organic rightness. For example, MIT's Art History Department has made, what seems to be, a provocative contribution of this nature. Because their students are often different in training and temperament from liberal arts students, ways to reach and motivate them are correspondingly different. Professor Wayne Anderson put it this way: "Teaching should not deal in facts, only issues. It is immoral for a teacher to get up and repeat what is available in books. I think it is wrong to teach things as if they were true, and I am not satisfied with much of what I read as art history - too many tales that are romantic exaggerations." He went on to explain that he and his associates prefer to engage their students in large issues about which there is no solid agreement among art historians by means of which they learn how multi-layered is aesthetic truth. Their students do best, he says, when no one charts a prescribed course. Instead the instructor establishes a controversial issue, and sets the students loose to research it. After considerable study and discussion students arrive at their own answers in a way that advances their growth. The student learns to generate his own concepts, eventually dealing more critically with the concepts of others.

The response of science and engineering students to studio work in the visual arts opens doors on the limitless vistas of expression outside the traditional media, using new technologies. "If I could have several graduate assistants to help me," said MIT Professor Preusser, "I would choose a metallurgist, a mineralogist, an electrical and a civil engineer. I would equip a studio with blow torches, vacuum forming presses, adhesives and computer components. Then we could really begin to explore the media of our age. There are worlds to conquer in art." This same professor of the undergraduate workshop in visual studies commented that he preferred "anonymous" studio spaces, "Where what you are working on is more important than what you are working in."

The Humanities Department is responsible for all general studies at MIT except art history, which, along with visual studies, is the responsibility of the School of Architecture. It was Dean Burchard's decision, some years back, to so divide these disciplines. Faculty rapport between one area and the other is respectfully helpful. (Perhaps this is fostered by what the planning department calls a system of "kinetic transfer", where interconnected buildings and paths make it necessary "physically to pass through an activity different from your own.")

The Chairman of the Humanities department, deeply interested in the visual arts indicates an increasing use of slides and films on the part of his colleagues, and feels that no rigid patterns of thought about the teaching and learning process have been established in his department that will make it unexplorative in relation to the need for change.

It is to be expected that the normal fears that worry many teachers concerning the instructional uses of electronic hardware do not intimidate the faculty at MIT. Here the language of the computer is as familiar as seaweed to an oriental cook. Surely research in the visual arts will soon be undertaken, aided by the same computers now ingesting coded facts for almost instantaneous retrieval in the sciences. It may well be that the big breakthroughs in the application of the computer to learning processes in the visual arts will take place not at the art or liberal arts colleges but at a place like MIT which has no defensive, proprietary positions to take that would block the acceptance of new configurations for acquiring needed knowledge.

The Institute's libraries are vitally integrative parts of the instructional programs, relating books and electronics in as advanced a manner as can be imagined. Dr. William M. Locke, Director of Libraries, and his associate, physicist Dr. Meyer M. Kessler, are enthusiastic about the work of the computer in the storage and retrieval of information. The library administration at MIT is completely in touch with how it can and should be useful to the total institution. And MIT is the only university in America, possibly in the world, that has a library in its Student Union open seven days a week, twenty-four hours a day.

To summarize what has been implied but not always explicitly stated: MIT is well on the way to a better balance between fact and fancy, science and art. It is certain to reach for the instructional equation that will make its students not only well educated but more fully involved in the sounds and sights of the cultural world around them.

III. NEW YORK UNIVERSITY

New York University is on the move. One senses a state of imminent change throughout this multiversity primarily based in New York's Greenwich Village. Many of the buildings are obsolete and old, scheduled for replacement. There is a "make do" resignation to their inadequacies as talk of a $250,000,000 building plan to be achieved within the next 12 years raises hopes about the campus that is to be. And there is universal acknowledgement that the present vigorous administration knows where it is headed and how to get there.

On viewing the absurdly inadequate facilities of the Art Education Department, one marvels that it has been able to gain and maintain an enviable reputation for turning out able artist-teachers. Studio space is crowded, poorly lit, lacking in storage space to answer all but the most modest needs. Classroom space is also at minimum, though it has been increased recently. It is currently located on an upper floor of a School of Education building scheduled for replacement. Hampered by the lack of studio space at the University, art students who can afford it often rent loft space in surrounding areas.

Administrative space, in another building a block away, provides only cubby hole offices for faculty members, isolated in feeling from the rest of the University, and uncomfortable for waiting students and other visitors. There is optimism about the future when the new School of Education building will guarantee more and better planned space for Art Education as well as other disciplines.

At NYU there is pride in being in the heart of the New York scene; its faculty and students are "with it". The student can make the entire metropolitan area his campus laboratory. NYU offers credit courses each semester that take students to galleries and museums as their daily "classroom" experience. Although most art schools urge students to make as much use of nearby museums as possible, few can offer the diversified smorgasbord of Manhattan's multiple houses of culture.

Although art history and photography are taught in several colleges of the University, the only art studio courses available currently come under the aegis of the School of Education's Art Education Department. It is therefore unlikely that a student majoring in, let us say, history or physics would be able to fulfill any desire he might have to paint or sculpt. NYU's enormous range of courses - 2500 - may overwhelm most students into sticking pretty close to narrowly charted channels with specific career goals. Moreover, the Art Education Department has neither space nor facilities to accommodate as many students as it already serves. And even in the future, it is the understandable view of the Chairman that he prefers to do the best job possible for about 500 students rather than increase their number. The present curriculum for majors in art education is largely in the fine arts, supplemented by courses in teacher training.

The University's President, Dr. James M. Hester, foresees a future need to extend art offerings not only for the professional but to provide enrichment to those "hobbyists" whose increased leisure time will afford them the chance to appreciate and perhaps practice the arts. A Sunday painter himself, he understands the nourishment of visual experience. But, as yet, there is no firm plan as to how these proposals will be implemented.

Nor is it easy to determine how to answer the expressed wish of the Chairman of the Physics Department that students come to him with better backgrounds in the arts because of his feeling that they have an abstract base comparable to the sciences. "The affinity of scientists for the arts may stem from a respect for the equivalents that underlie both. But in their single-minded search for progress in their own specialties, artists and scientists too seldom learn to speak each other's language," he said.

The NYU art collection, originally organized by Art Education Department Chairman Howard Conant, and consisting of more than 700 works, is used to advantage throughout the University - in the large, modern Loeb student center, in offices and administrative areas, even in corridors. One student guide pointed to a blue-green abstract canvas hung in a narrow windowless hallway and said, "This is our meadow." A graduate student in a physics lab commented, "This is our living room; we spend 14 hours a day here. Pictures make it more livable."

More and more colleges recognize the need for works of art as part of the educational environment, but few have pointed the way as effectively as NYU.

Instruction in art history at NYU on an undergraduate and graduate level takes many forms: the Department of Art Education furnishes its own teachers probably because it feels its needs are special; Dr. Horst Janson, author of the most widely used textbook in the field, heads the department in Washington Square College; and the College of Arts and Sciences tailors its own undergraduate art history courses. What the quality of these diverse courses is we have no means of knowing. The reputation of NYU in this area, however, has been excellent for many years, notably so in the graduate program.

The estimable graduate Institute of Fine Arts, conveniently located near the Metropolitan Museum of Art, in the grand-scale former residence of the Duke family, specializes in connoisseurship, museum training, criticism, and art history. It is proud of the fact that it produces more PhD's in its field than any college in America except Harvard. Self-sufficiently organized with its own library, this well-upholstered satrap of scholarship includes the twentieth century in its broad palette of specializations. Its director, Dr. Craig Smythe, when questioned about the film as a fine art commented, with a progressive glint in his eye, that a PhD candidate was completing his thesis on the surrealist film. About the marble-floored, elaborately elegant quarters that have been adapted to serve as educational spaces the director said, "They suit our activities very well." And he made the point that this architectural setting has given dignity and decorum to the Institute bringing favorable community response and making it somewhat easier to raise money.

A brand new NYU offering is its School of the Arts that will bring together gifted student apprentices and master teachers in a jewel case training program for small (18-20) groups of students of the performing and visual arts. This is essentially a non-degree program, although degree credits will be achievable for those who desire them. This school within a school is a pilot experiment warmly endorsed by the administration and planned to create an ideal environment in which promising artistic talent can flourish. It exists autonomously, but works in collaboration with other Schools of the University that offer instruction in the arts. Dean Robert W. Corrigan's feeling about architectural spaces in relation to his school is that he will happily settle for inexpensive lofts large and bright enough to give the artists room to function. This thinking is consistent with that of many other educators in the arts who prefer open flexible areas however modest, to more rigid, even new, solutions. One might speculate that the classic artist's garret is chosen as much by preference as by economic necessity. One student told us that the newly built junior college where he had begun his art education kept its studios so spotlessly clean that it made students feel guilty if they spilled any paint. He claims it so hampered his work that he was relieved to transfer to a place where the studios are well worn and far from pristine. This new school recognizes that many gifted student artists find it difficult to divide themselves between their intense commitment to art and the usual college imposition of academic course hurdles. While artists certainly are not less interested in ideas than others many of them reach their concepts less through verbal ideas than by means of their eyes and their feelings. What the School of the Arts makes possible is the return to the University of artists who would not normally be drawn there because of the conventional component of courses which most artists prefer to take cafeteria style, if at all. Such an experiment deserves to be watched with interest.

In planning the new Department of Education building at New York University, something of a formula has been evolved by Deans Griffiths and Field after careful consultation with their colleagues: classroom space of 15 square feet for the average academic student, 30 square feet for laboratories, both graduate and undergraduate; seminar rooms are given a minimum of 20 square feet per student. A module of 140 square feet has been developed for professors' private offices. There will be room for a desk, chair, personal library and space to talk to 3 or 4 students. It is said that this is about 50% more than that allotted faculty members at other institutions. This new School of Education building is planned also to offer forms of programed instruction and testing and make extensive use of visual aids.

NYU is thoroughly committed to the fullest possible use of electronic hardware as an educational aid. Its multiplex computer system, with many widely dispersed users tied into one master unit, is gaining increasing patronage throughout the university. Considered indispensible for most scientific disciplines, it is beginning to challenge other educators to determine appropriate applications for their own subjects.

At New York University and elsewhere we found among students what appeared to be an increasing interest in the visual arts and a desire to learn more about them. We naturally thought that this stemmed primarily from the fact that better qualified art teachers were going into the primary and secondary school systems. It was therefore assumed that if art instruction during pre-college years is being upgraded, the increasing numbers of students that come to college and continue their art interest will require courses that are more and more mature to match their growing competence and understanding. In checking this out with college admissions officers and with art teachers of freshman students, we asked if there is a measurable improvement in the preparation of students coming into the colleges today as against a few years ago. Except for a few optimists, the reply was "It is hardly perceptible." They said that since there are more students coming to college, there are proportionately more art majors, but that may not necessarily be interpreted as a favorable sign that art instruction in the high school is much better than it was or that there is more of it.

In tracing this back, we talked at some length with Olive Riley and Ronald Day, the directors of art instruction for the public school systems of New York City and Cleveland. They both confirmed that as the struggle to get into college gets tougher, high school students are advised to devote themselves to those academic subjects regarded as the basic yardsticks for admission, and not to the arts which are often unacceptable as credits on college transcripts. They agreed that until the colleges regard the arts as significant, in their way, as math or history, the arts will continue to be treated as recreational "frills" not to be taken seriously.

The unfortunate result is that fewer students are taking art courses in high schools today than before. The only reason this has not had its full deleterious impact is that the number of young people coming to colleges has increased substantially and perhaps that urban communities offer more out-of-school art instructional opportunities than before.

It is hardly credible that, at this period in our cultural history when the arts are gaining in recognition everywhere, the high schools should be doing so little to further the growth of talent and understanding. If this bottleneck were to be corrected, the number of students wishing to pursue the arts would undoubtedly be substantially larger. Instead of coming into college as semi-visual illiterates they would, by their presence and their improved preparation, compel the colleges to upgrade their own art offerings. If large foundations and leading federal agencies were to make their major goals the improvement of pre-college art instruction, college spaces needed for the visual arts would multiply manyfold.

Dr. Conant and his colleagues at NYU are thoroughly aware of this circumstance and they are doing what they can to alter it. A comparable situation was found and radically revised in the sciences in response to the Sputnik and all it signified. What similar incident in the arts do we need to propel us into an equally constructive teaching revolution?

IV. PRATT INSTITUTE

Pratt Institute is a "no nonsense" school and it looks the part. There are few lounges or contemplation corners. Ivy does not cling to its buildings which are not often the results of planners' plans or dreamers' dreams. In the beginning the institution was created to enable a student to earn a living in a profession as an architect, an engineer, an artist. Consistent with comparable schools, a leavening has taken place, and the emphasis has shifted from the purely vocational toward educating the "whole" student. The liberal arts humanities base has broadened; the vantage point enlarged.

Situated in Brooklyn, 20 minutes from Manhattan by subway, Pratt's 18 acre campus is a mass of oddly assorted buildings criss-crossed by parking lots and flat, sparsely planted green spaces. There are multi-level dormitory apartment buildings and rows of small houses where students live.

The amount of space allocated to the Art School has doubled in the very recent past with the addition of two converted buildings: one, formerly a warehouse, consists of five floors that have been transformed into Pratt Studios, the other, previously a grammar school, now serves as the facility for the Foundation and Graduate programs. In both situations the spaces were adapted as economically as possible. Although no one claims the situations to be ideal, there is general agreement that it represents a vast step forward. Actually both students and instructors who were interviewed expressed a preference for older buildings "that can stand some spillage." When buildings feature high ceilings, wrought iron-railed staircases and great oval skylights, as they do in the case of the converted Adelphi school building, modern architecture seems to have trouble competing for the affection of artists.

Despite the doubling of space, the Art School has obvious unmet needs: for adequate exhibit areas; student lounges; audio-visual aid equipped rooms; a comfortable auditorium that can seat the entire student body; evening school accommodations; administrative offices; etc.

Moreover, the move to Pratt Studios was made somewhat hastily, under pressure, without thorough advance planning, with the result that some areas are insufficiently lit; others have acoustical problems; heavy machinery has been installed on an upper floor instead of one where it might have been more appropriately placed. The allocation of space seems to have involved some "squatter's rights". This is understandable since the need for lebensraum has been so pressing. When space became available the fast movers grabbed it.

Pratt Studios in general has made the transition from warehouse to instructional spaces with some grace, however, and although fire laws dictate much of the arrangement of partitions, there are few complaints from either faculty or students about the large airy loft spaces to which they have fallen heir.

The cafeteria at Pratt constitutes the main place for interaction between students. Big and noisy, with row after row of long tables it is fully occupied from morning until night. The room is filled with students involved in intense conversations. They look the way artists are supposed to look. Perhaps the future development of Pratt will provide more and better spaces for the student bull sessions that are a significant part of the educational process.

The faculty cafeteria also serves as a meeting place, as it does at Sarah Lawrence and other relatively small colleges. Here instructors from various disciplines become involved in healthy cross-the-table discussions that increase familiarity with what is being taught in other departments than their own. The limited number of area eating places serves to make these cafeterias a hub of the life of the college.

Pratt's administration is far from smugly content about its physical plant or facilities. There is an admitted need on the part of President Richard H. Heindel and Art School Dean Albert Christ-Janer ~~are well aware~~ that the administration and faculty must take searching looks at what the next ten years of development should bring. In the past decade, the institution has evolved, like most similar schools, from what was admittedly little more than a trade school to the largest independent art school in the country.

Several campus plans for the future have been completed and scrapped during the past ten years. A scale model occupying almost a full room in the administration building has already been bypassed as a planning guide for the new expansion program. At present, a full time architectural consultant is engaged in evaluating what exists and recommending what needs to be achieved. The architectual firm of Edward Larrabee Barnes has been engaged to carry out major building plans. A $6,000,000 gift from the Pratt family will be used as the basic funding for the next building. There is a "believe it when I see it" feeling on the part of both faculty and students when a discussion of new buildings is begun.

Several students who were interviewed admitted that the high schools from which they came offered more impressive physical plants and facilities than Pratt. "But after a week or two here, you just forget about it," commented one. "You learn to grow up here; to work hard. You really learn about big city problems when you're next door to a Puerto Rican neighborhood. Pratt is the way it looks - tough. You don't fake your way through here."

Like most schools, Pratt Institute faces its problems on a day-to-day basis hoping, somehow, they will get solved. And it hasn't done too badly staying just ahead of the breaking wave. Its strength has been mainly in the Art School, with significant progress in the School of Architecture. The Evening Division of the Art School, once a flourishing enterprise is now regaining momentum on a solid footing after shaking up its program to achieve quality rather than quantity. It attempts bravely to operate an Associate Degree program using day school facilities without adequate equipment or storage. The chairman of this activity is aware that an important aspect of the program will some day be the career "retreading" of its day school graduates. Although many art school alumni are challenged sufficiently by their jobs and are intellectually knowledgeable about their specializations, some need refresher courses to bring new insights into their fields that can help them freshen and advance their work. Particularly in such areas as interior, industrial and advertising design, obsolescence can be as great a problem as it is in science, where, as one expert put it, "These days what you learn at college is out of date in five years!"

Pratt's General Studies Department serves the entire

Institute in all fields except art history which the Art School and School of Architecture prefer to administer themselves. In inquiring of the chairman of this department how much use is made of visual materials in such courses as history and anthropology, he answered that, to the best of his knowledge, his faculty had not made use of any. This is true not only at Pratt, but in many situations where faculty members are extremely literate verbally but almost without the ability to see how their teaching could be made more effective pictorially.

Most independent art schools like Pratt are concerned with the equation of humanities courses to studio workshops. The general belief is that nothing but a five year undergraduate program will enable an art college to do justice both to the arts and to the humanities. Competing for the time of students who are more committed to studio work usually relegates general studies courses to grudging acceptance and minimal effort.

The professional art school associated with a University, such as the University of Michigan does not seem to find as much reason to question this delicate balance of humanities to studio courses as much as the independent art schools, perhaps because the University-based art schools believe more strongly in the value of the humanistic offerings for artists.

The courses in art history offered by the Art School at Pratt are given by a staff of artist-teachers who concede they must cover too much ground in too short a time to classes normally too large to encourage student feedback. Most art schools have wisely increased the art history offerings to three hours weekly for at least three years with electives offered in the fourth year instead of expecting one or two survey courses to do the job.

Like other art schools, Pratt is handicapped by the lack of personnel and equipment to make all the slides and visual materials needed by the art history staff as well as the studio teachers. The easy availability of classroom projectors and a visual resource center could help immeasurably to improve teaching effectiveness. It is difficult to imagine an area or discipline or department that could not be aided greatly by a visual resource center staffed by an informed and vigorous person to encourage full and proper use of visual aids and equipment.

Particularly impressive at Pratt are the spirit and perception of the teaching staff of the first year Foundation Program and the ample refurbished quarters they have recently occupied. The climate and environment of the spaces are thoroughly congenial in a neutral way that do not impose themselves on the student but invite him to be less aware of the building than of himself.

We raise this issue because the proper environment for an artist is a strongly debated subject everywhere. Pratt is fortunate in having been able to adapt several older local buildings to accommodate classes of different sizes and purposes. The age of these buildings and the varieties of classroom situations offer psychological and aesthetic assets difficult for architects to create in new spaces.

In Pratt's Foundation Program the instructional point of view is grounded in the belief that concepts are gradually revealed from the act of doing. Current studies of motivation and the learning process in this country and abroad indicate that students cast into the arena of a problem with little explanation or preparation to guide them generally do better than by other methods of instruction. The chairman of the Pratt Foundation Program has surrounded himself with a team of artist-teachers involved in an unending exploration of ways to train students to see and feel and understand.

The only department of the school that supplies its own first year program is the rapidly growing Interior Design major, which occupies newly enlarged, redesigned quarters in the main administration building. The alert and knowledgeable chairman has evolved a professional program that is practical yet imaginative and firmly rooted in architectural understanding. This Department's resource files of reference materials is expanding rapidly. Such decentralized resource centers are essential for most design departments.

The Art Education Department makes considerable use of visual materials, - slides, films, photographs and reproductions of works of art in its training workshop programs for teachers. This department also would be greatly aided by a resource center to which it could turn readily for needed instructional materials. Like the University of Michigan and a few other progressively minded institutions, Pratt employs and compensates those "master" teachers in the schools who assist their practice teachers.

Pratt's Graphic Arts Department has greatly advanced instruction in printmaking, typography and book illustration, serving also as sponsor of the School's excellent student publication and of a variety of community-minded work projects. The expandable aspects of this department include its typography department, which could make good use of a photo-offset proofing press, photo-enlargement and reduction equipment and a larger selection of type faces. While the Graphics Department has become less commercial in its instructional orientation, it still has healthy and realistic anchorage in the world of business. Additional departmental space for printmaking could significantly effect the quality of student work.

The expanded Pratt Institute Graduate Programs are also comfortably installed in recently renovated quarters. There are about 200 students majoring in Art Education and various fine arts media. The spaces assigned to individuals are generous, comparing favorably with those in other colleges. Although college administrators continually complain about the cost of such lavish studios for graduate art students, competition among colleges for qualified candidates tends to perpetuate the practice.

It would not surprise us if, within five years, these graduate programs have twice the number of students enrolled. Among the reasons for this prediction are the following: (1) Even though graduate programs are more costly than undergraduate instruction, they carry more prestige and are more likely to attract foundation and federal grants; (2) The four undergraduate years for educating an art teacher are clearly inadequate and advancement in the school system is more and more predicated on at least a Master's Degree; (3) Predicted population growth projections indicate that more and more students will enter college and continue through graduate school.

A few words about storage facilities at Pratt and at other institutions: they are usually deplorably inadequate. Where space is in short supply, storage is thought of last or not at all. The lockers at Pratt, even those most recently acquired, never seem large enough nor deep enough to contain all the supplies, tools, works in progress and items of clothing students need to store safely. Almost everywhere the storage of paintings is chaotic. At most schools students complain of stolen work. Space for storage of sculpture and other three dimensional work is even harder to come by. This can be so discouraging that student work is apt to suffer from lack of space.

Louis Kahn, the architect, acutely aware of this problem in planning new studio buildings for the Philadelphia College of Art, has provided almost as much storage as classroom space. At most art colleges the space ratio of storage to classroom is about one to three. Anything less than this is too snug for comfort.

The question of storage impinges on the whole general problem of security. A nationwide rash of thefts of art work has created concern at many colleges. In designing exhibition spaces for classwork as well as for the visiting public, security must be built into the plan. It is also essential that preparation and storage spaces be provided for incoming and outgoing exhibits. It is helpful too, if portions of public exhibition spaces can be subdivided without blocking traffic flow so that exhibitions in preparation can be temporarily separated from public view.

Pratt has planfully distributed exhibition spaces throughout the school relating them to the work of the various departments. It lacks a general exhibition area that can accommodate major exhibitions. Provision will undoubtedly be made to solve this and other stated problems in the new building now being planned.

V. SARAH LAWRENCE COLLEGE

Compressed into a relatively small 23 acre area in a wealthy suburb in Westchester, New York, Sarah Lawrence College's architectural appearance is as varied as the clothing of its students. There is the handsome manor house of the founder that serves as the administration building perched on a hill that overlooks all the rest. The first building one sees on entering the grounds is a Marcel Breuer-designed student lounge-auditorium building that gives the clue as to the college's warm affinity for what is contemporary classic. The dormitories make no pretense of relating architecturally to the rest of the buildings.

Respect for individuality is emphasized at this college and the buildings are as non-conforming to a pattern as the hairstyles of the girls. During the recent past a number of nearby homes have been acquired to augment the college's holdings and answer pressing needs for space. Such evolving programs as Continuing Education cry for more room and increased enrollment but the administration is determined to hold the line on bigness and to find resourceful solutions to space problems that involve more invention than expenditure.

The administration, headed by Esther Raushenbush the newly inaugurated president, who is as energetic as she is wise, is sharply aware of the college's space inadequacies. An internationally respected campus planner has been engaged to prepare a blueprint for the future. As in many other places, the lack of money has been a consistent deterrent here to physical development. Lack of adequate endowment has made it too dependent on tuition, one of the highest in the country, for actual working income. A major fund-raising program is in the offing to correct this fiscal booby-trap, as well as to enable building plans to move forward.

Regard for the visual arts is demonstrated in the sensitive placement of sculpture throughout the campus, the work of members of the faculty in some instances and of an international group as well. The desire was expressed by a professor of art history that visiting artists from other countries be invited, but adequate funds have not been available to support this recommendation.

Although Sarah Lawrence is now past forty, it has stayed viable and experimental consistent with the planning that was its hallmark from the beginning. Somewhat inconsistently, however, the art department is relatively conventional in its orientation, and although its studios reflect devotion to the highest standards of the traditional in drawing, painting, printmaking and sculpture, there is a sense of relatively fixed position and viewpoint that seems not to benefit fully or be enriched by much that is happening outside of Bronxville. The spaces used for art instruction have not changed in more than two decades, nor it would seem, has the point of view about how the visual arts should be taught. This may be explained in part, perhaps, by the fact that a considerable number of the students electing art are not professionally committed but are undertaking the study for the enrichment it offers. There are no courses in photography or the film, weaving, ceramics or visual studies, let alone the commercial arts such as interior, industrial or graphic design.

In a questionnaire answered candidly by students recently, there was considerable evidence that the introduction of a wider diversity of art courses would be welcomed. However, differing degrees of talent and involvement make it hard to structure and staff art courses that can serve all the needs. As things stand, art courses are oversubscribed, and the faculty has to defer some students and discourage others. Hopefully, in its future planning, the College will find ways to expand the art offerings and to improve and enlarge the physical spaces where they are taught. At that point the more dedicated and experienced students might be placed in special classes.

The art faculty consists of gifted practitioners of the specialties they teach, men respected as artists and seriously thoughtful about how they provide instruction. One, Kurt Roesch, a teacher of painting and senior member of the art faculty, commented, "In addition to art, we should really give these young women the visual training that will help them function more effectively in their future leadership roles in their communities, as consumers of art, as members of urban planning boards, etc. Ideally we should offer enough art and architecture to enable them to become constructive critics of the world around them." This kind of thinking is commendable, and might well be implemented by the introduction, at the very least, of basic courses in the fundamentals of form and color using various media in both two and three dimensions.

Instruction in the arts is now offered in studios that are barely adequate in space, although they are effectively skylit and pleasantly close to the faculty offices that encourage students to have constant and close interchange with the people who teach them. There is general awareness that facilities are badly in need of improvement, but the spirit of both faculty and students here seems to be one of being willing to put up with practically anything because the overall feeling of the place is so special.

Here is one campus where spaces for instruction in the visual arts might well be doubled to accommodate the same number of students, and where the arts offerings should be expanded and made as experimental as other disciplines.

This unique school which has always attracted students who enjoy music, the dance as well as the visual arts, might do more to fuse these activities consistent with the trend in the theatre today. An architectural solution could serve to foster interrelationships of this kind by creating proximity of spaces that would inspire the exchange of experience. It would seem that Sarah Lawrence has a mandate to provide its students the opportunities to explore as fully and deeply as possible the experimental in the arts.

Art history at Sarah Lawrence has devoted and enlightened leadership. The slide library is more extensive than that of many larger colleges, and is used occasionally, we were told, by instructors in courses other than art. On seeing the effort and time that go into maintaining and adding to a slide collection of this sort, we are repeatedly reminded of the inestimable value that strategically situated visual resource centers could provide to such colleges as Sarah Lawrence. Economically produced slides of high quality should and could be available to colleges from such sources, avoiding the present duplication of effort that engages too many struggling art history professors whose time might well be better spent.

Professor Rudolph Arnheim, who has written widely and well on the subject of creative perception teaches the Psychology of Art, a course that provides good conceptual scaffolding for anyone who plans to undertake the serious study of art. This gifted teacher's unique combination of talents enables him to present a course that might ordinarily take several instructors to handle, since it deals with aesthetics, psychology, and a certain amount of philosophy and art history. All too often at larger colleges it is impossible for a student to combine these disciplines since each is a highly specialized subject, possibly offered in different colleges of a large university. In most colleges, slavery to catalogue descriptions make it mandatory to find a man to teach a given, rigidly specific course. At a small college like Sarah Lawrence, the man can determine the course, teach it his own way, never quite the same as before, and take his students along the path of his own intellectual curiosity. Incidentally the day we attended this class, it was taught in a basement annex room, with a neighborly dog visible at one or another of the windows throughout the hour, and none of the ten students was the slightest distracted. A good teacher, it would seem, can conduct classes on the subway without losing his audience.

Since there is no grading system at Sarah Lawrence other than "satisfactory" or "unsatisfactory", and continual progress conferences with one's don, or counselor, students are free from the usual concern about marks of most college students. It is interesting to note that the highly motivated young women who comprise its student body of 550 make particularly good use of the extensive library, and tend to engage in complex projects that involve them in devoting much time to independent research. Zest, intensity and intellectual appetite characterise students, faculty and administrators alike. Lack of funds rather than lack of vision is the primary reason for foot-dragging here.

The Continuation Education program at Sarah Lawrence pioneered the idea of enabling women past the usual college age to complete their undergraduate studies. The art program for this group offers experiment and experience with a wide variety of media. Despite the fact that few who come into the program think of themselves as talented artists, the work of the group is sufficiently arresting to point the way to other schools that many "retreads" and other adults returning to the educational world as a result of increased leisure time have a natural interest in gaining visual literacy and an affinity for imaginative art programs that can enable them, at the very least, to become more enlightened consumers of art. This type of program is becoming increasingly popular in many places, as colleges feel a growing cultural responsibility to the surrounding community.

VI. UNIVERSITY OF MICHIGAN

The University of Michigan combines big city sophistication with small town friendliness. Its size -more than 30,000 students- is by no means as overwhelming as the thought that there are so many minds to feed. The look of the place is respectible middle class. Architecturally it is nondescript except for a few older structures like the President's house and the building that houses the Art History Department which are unpretentious and individual. More recent buildings on the edge of the old campus and the beginning of the new have an attractive contemporary look as do some nearby apartment houses.

The aesthetic inference drawn on entering this campus is that one should not expect any more from the University as an educational establishment than the appearance suggests. The visitor quickly discovers that this isn't so. The play-it-safe architectural facade does not reflect the civilized solidity and thoroughly contemporary attitudes that are to be found everywhere - among faculty, students and administration.

In the many conversations we had with faculty members and administrators it was notably impressive that they were either on top of their problems or a few comfortable strides ahead, not about to be engulfed by them. We met no one who was content with the status quo. What we drew from this is that faculty and staff are secure enough in their jobs and so confidently competent that they have no need to be overcautious about experimenting with new ideas.

The visual arts at Ann Arbor have widespread administrative and faculty acceptance but without enough, it seemed, understanding of their real meaning and value. None the less, excellently qualified people like Professors Iglehart and Eisenberg are chosen to do a job and then given their heads to do it. This in turn is the manner in which these chairmen delegate responsibilities to others.

The results are impressive. The Art School's 800 students occupy spaces designed for about half their number in a building shared with the School of Architecture. As a result, some of the corridors often have to serve as temporary classrooms. Art schools have for so long accommodated themselves to substandard spaces and equipment that it almost seems strange to be comfortably and efficiently housed. There is now promise at Michigan of a new building to take care of 1400 architecture and art students, located in the new campus.

Until then students will impatiently wait their turns to enroll in ceramics, one of the most popular courses. The ceramics workshop, as well as the adjoining sculpture studio are ample and well equipped. What is lacking is the quantity of space necessary for all the students who want to participate in these activities.

Such a situation is common in art schools. The initial reason is not always a paucity of space but sudden unpredictable groundswells of interest in various media triggered either by a volcanic eruption in the world of art or the special quality of a great teacher. It is most difficult for large universities to adjust themselves to these eruptive waves. By the time the demand is recognized it may so far outstrip the supply that the only thing to do is hope the problem will lessen and that students will be satisfied by their detours into other subjects. Smaller schools, often closer to the pulsebeat, are usually able to sense the shifting demand and make adjustments before crises arise. If large institutions like Michigan are to keep their art areas viable and maintain both faculty and student morale it is important that their responses to needed change be swift.

Other classroom and studio spaces in the Art School are characteristically both overcrowded and strongly staffed. The drawing and painting rooms are discouraging to all but beginning students who seem to be spurred by propinquity.*

The printmaking sections are very ably organized and taught, student work reflecting respect for the medium and an honest search towards using it to advantage.

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* A study by Don Masterton at the University of Illinois, "The Design Environmental Facilities for the Creative Arts", has pointed out the continuously changing space needs of art students who, as beginners, like to work in large groups, but with increasing maturity do their best work in smaller groups.

The head of Industrial Design, Professor Aarre Lahti, has taken the initiative to work collaboratively with Dr. Stanford Ericson's creatively experimental Center for Research on Learning and Teaching to develop how-to-do-it cassette films that can serve as prototypes for instruction in such techniques as welding, soldering, vacuum-forming, the use of power tools, etc., saving the teachers time and talent for more conceptual and critical teaching responsibilities.

The Art Education program at the Art School, while relatively small, is thoughtfully administered by a knowing staff whose good-will ambassadorship with school systems establishes mutually helpful give and take. Graphic design as it relates to industry is vigorously and competently pursued. A small new photo studio situated on the breathless top of a tower offers a token indication that the leadership believes in the craft and creative uses of this important medium and hopes to do more with it. Although there is no typographic workshop there is awareness of the need and again the stated intention that provisions will be made in the new building.

The film is unequivocally recognized as a major medium requiring large spaces and sizeable investment in equipment. Instruction in filmmaking, however, is being deferred. Minimal incursions into aspects of making films are included only in a popular three dimensional design course, with Instructor George Manupelli managing to inspire his students to find their own equipment. Michigan has taken an admirable leading role in organizing and promoting film festivals of student work at its own and other colleges.

Many colleges are sitting on the decision as to whether to go full-scale into teaching cinematography, guessing that eventually they must commit themselves fully to the film as a creative art, but not certain how to begin. Within a decade all colleges with art programs will unquestionably include filmmaking. And since theatre, music and language are only a few of the components of the film, there will need to be an alliance of operational understandings among many parts of a college. Already this intermarriage of the arts is happening at Michigan where the avant garde has some members in good standing. The Once Group, combining the talents of an electronic musician, an artist expert in light and sound, sometimes poets, dancers and filmmakers has presented several notable performances in Ann Arbor and on the road that give evidence that the new theatre, where spectator becomes participant, is making substantial strides.

Perhaps too remote from this arena of experiment and chance-taking is the University of Michigan's industrious Television Center that spends a sizeable sum of money yearly to make films for distribution to more than half a hundred college and educational TV stations. This important activity is regarded as a communications medium rather than an art form and is, therefore, curiously the responsibility of the Department of Speech. As we walked through the Center admiring the technical know-how, its facilities, planning and production it seemed regrettable that students of art, theatre and music were not working more closely with the Center to learn and improve the medium of television. Fragments of films we saw were fine pieces of professional craftsmanship that have no doubt done much to further the good name of the University. Our only question was whether the available art talent at Ann Arbor was being adequately encouraged to create sets, provide lighting and use graphics as excitingly as they might be.

A more singular example of the uses of talent is to be found at the recently formed Center for Research on Learning and Teaching, which serves as a catalyst to synthesize the outstanding abilities of many departments throughout the University. Making the most imaginative use of advanced learning concepts and tools is the Center's self-given assignment and that of its Lincolnian director, Dr. Ericson. The fears that scholars have about gadgets is being displaced here by their better understanding of how the new world of electronics can serve as a helpful extension of the human mind.

The faculty invited to work with the Center soon learns that one of the important values of the computer is that it can help break through some of the protective resistances that our feelings and minds habitually present to new ideas. One of the computer's most valuable assets is that it presents on demand all the possible replies without regard for the personalities of the people who ask the questions. The intellectual defect of the human condition, its self-protective instinct, its obsessive concern for playing it safe, is what the computer bypasses. (This is precisely what the creative artist does when he is functioning at his best: he either leapfrogs or digs under such obstacles as the power of the past, fear of unfavorable criticism, possible loss of love or friendship - an endless number of tortured pressures that society is quick to impose on people who threaten conformity.) The Center at Ann Arbor is beginning to demonstrate that the answers that come back from computerized questions are often revelatory.

There are numerous people in prominent positions at the University of Michigan who believe this too and use every technological tool that the light age can offer. Ann Arbor's sagacious Director of Libraries, Dr. Frederic Wagman, has a firm grasp of all the possible uses of equipment, - visual, auditory and electronic - to satisfy the needs of the scholar, the student and the comptroller. Rooms and carrels with their special equipment are available in sufficient quantity for the various forms of research and learning. Where the costly economics of the computer can be justified, as in the acquisition of new books - so that budget balances are known at any moment - this is done. Where it is as yet impractical to use a computer, namely as a substitute for the card index system, the librarian will wait until the various Library of Congress studies of this problem result in federal grants (many millions will be needed) to get this gigantic undertaking done so that all libraries can share the fruits of such a subsidy at a reasonable cost to each.

Libraries, apparently, are among the fastest growing college perennials. The reasons are easily readable: (1) the speed with which knowledge is produced and the need for more efficient ways to store and retrieve it; (2) libraries are increasingly expected to perform functions such as supplying instructional films, slides, tapes, discs and the spaces for using them - previously the responsibility of various instructional departments. Understandably, therefore, libraries, are no longer paperbound but becoming more and more visual and auditory. The librarian more than almost anyone on the campus must anticipate the specific educational goals in the years to come.

Visionary seeing around corners is necessary to good campus planning. In anticipation of growing undergraduate demand for more instruction in Art History as well as to make adequate provision for the rapidly increasing number of graduate candidates, Professor Marvin Eisenberg, the Department's enterprising chairman, has submitted plans for building an addition to the present quarters that will accommodate the library and large (90,000) slide collection so that current spaces may be used for additional classrooms.

The staff of the Museum, directed by Dr. Charles Sawyer, works closely with the chairman of both Art History and Art to organize changing exhibitions that relate instructionally to the overall objectives of these areas as well as to the student body in general. The Art Museum's fine study collections are on view from time to time. There are future plans for relocating both the Art History Department and the Art Museum, allocating more generous space to answer their needs.

In planning tomorrow's spaces, some colleges are no longer making judgments on the basis of what they can construct for the least amount of money, but on the sounder educational premise of what will be best for the student. An example is the development of the resident college concept within the University of Michigan (as well as Yale and the University of Pennsylvania). Estimated costs per student for this as against conventional housing is about $10,000 to $4,000. And yet there is overwhelming endorsement of the idea to counteract the sense of alienation that bigness often fosters. The resident college is intended to interweave living and learning in order to make the college experience more worthwhile for many types of students. Within two or three decades it is likely that there will be a great many self-sufficient colleges on the campuses of larger universities. These new spaces will undoubtedly have well-equipped art studios and libraries available 24 hours a day. (At the present time, economic and security problems combine to make it necessary to close the Art School building at 6:00 PM, a source of frustration to some students.)

The future as Ann Arbor sees it is a bright one. Its solid endowment and state support create optimism as to where the money is coming from, and its educational enlightenment insures that it will have all the students it wishes to admit.

In the course of this investigation there were recurrent issues that seemed to be on the minds of many people, - artists, educators, writers, critics, students. We can only identify briefly and describe what appear to be the major issues.

THE LEARNING PROCESS

About forty years ago, Stravinsky's Firebird Suite, newly composed, embodied within its buoyant abrasive tonalities, qualities of time and place that had not yet been sensed by many others. Picasso was another notable "rainmaker" who gave substance early to the still formless attributes of our age. Today the sounds and images created by these artists are still valid as art but less relevant as revelations.

It would have been difficult for us to believe at the time that we could accommodate ourselves so quickly to such radical changes in our ability to appreciate and understand new forms and feelings that have since become a permanent part of our aesthetic vocabulary.

The changes in the learning process are likely to be no less cataclysmic than the revolutions that have taken place in the arts and sciences. There is one significant difference, however, between those who pioneer new ideas and those who make a career of interpreting the ideas of others: the Eureka breakthroughs are made mainly by individuals; the interpretation is the responsibility of institutions that are conditioned to act cautiously and, therefore, slowly.

This may help to explain the gigantic gap - often referred to as the "cultural lag" - between what we know and what we do or don't do about what we know. As one astute administrator put it, "We have failed to adapt ourselves to our own knowledge."

Dr. Herbert Trotter, a former physics professor now Vice President in charge of Education of General Telephone and Electronics states it this way: "No significant effort has been made to apply modern technological achievement to education."

And he added the warning, which daily headlines make even more ominous: "As a nation we must either educate our people by the most advanced methods or we will have to support them and find ways to protect ourselves from them."

Neglect reaps a whirlwind. It is now affirmed that among disadvantaged people with minimal verbal skills, the neural structure of many children has been damaged, perhaps permanently, by a deprivation of environmental stimulation. "Headstart" programs may allay some handicaps and incapacities through concentrated early retraining. Much of the damage, however, is thought to be irreparable. A key official, concerned with the use of the visual arts in urban education said recently: "We may well have lost a generation of people whose value to themselves and to others is now so minimal that they will remain a heavy responsibility."

It has been found that the first four years of our lives are the most crucial in tuning in and developing our learning responses so that they have the largest possible capacity for understanding and that the ability to deal with complexity is infinitely greater than we have ever imagined it. Our responsibility now is to find a way to combine the most advanced psychological understanding of the learning process with the newest technological tools.

There is hardly any area or stage of education about which there is solid philosophic agreement: it is increasingly clear that grades and all they symbolize are among the least satisfactory rewards; that self-motivation produces better results than hand-holding; that even during the pre-verbal years it is possible to build into a child's responses an abstract understanding of numbers, spaces, sounds, forms and relationships that will later serve as a valuable scaffolding to formulate concepts.

Dr. Charles De Carlo, a former mathematics professor now in charge of long range educational planning at IBM, talks about a science-fiction machine he visualizes, a crib toy, perhaps, for the year 2000, planned to give the infant patterned sensations - auditory, tactile, visual - that will supplement the mother's care by providing subliminal experiences that can become a resource reflex bank in later years when the child is exposed to music, art, math, and science. We already are almost at the point where the technology for this experimentation exists.

Our dilemma and our tragedy, perhaps, is that we may win the world but lose our own souls. As we penetrate ever more deeply and swiftly into new knowledge, the hunger for self knowledge and for creative fulfilment becomes more intense. The visual arts will always play a major role in the discovery of self because they are based on revelation. While language offers us the means to deceive ourselves and others, visual expression pushes deception aside in order to be born. These truths, as artists see them, are what we live by.

THE CREATIVE ENVIRONMENT

An odyssey could be written about the complicated and controversial subject of college environments, particularly in relation to the visual arts. There are rising clouds of debate about the kinds of spaces for undergraduate and graduate students. The Paul Rudolph arts building at Yale has helped to bring such discussions into focus. Should a studio building for student artists have the strong stamp of the architect and, like a painting or sculpture, impose its own intransigent qualities on the people who use the spaces? Or should it be less individualistic and offer anonymous functional spaces which, by their lack of finality, invite students to participate in its completion by the addition of murals, sculpture, lighting elements, direction signs and symbols? It is argued that art students especially react unfavorably to the constant, visual presence of vigorous aesthetic views. And it is said that their work suffers from such an overpowering environment.

Perhaps that is why loft space in old, renovated buildings is found to be most congenial (although maintenance costs can be greatly in excess of new structures). At Pratt Institute, the atmosphere of the refurbished buildings now serving the foundation and graduate programs is unusually attractive. This also is achieved successfully at the University of Michigan in a small building converted simply and effectively to the varied uses of the art history department. New York University's penthouse painting studio in an old classroom building is the best of its limited facilities. It is doubtful whether new quarters would, in any of these examples, prove superior.

It is possible, although we have as yet seen no prototypes, that studio and classroom buildings could be designed which would, in the most inspiring sense, become an integral part of the instructional program; that living and working within such building spaces would be a profoundly exciting experience. Corbussier's Carpenter Center at Harvard has many of the elements that such buildings would hope to incorporate: it combines exhibition and workshop space within a firm, poetic format that gives students an organic sense of identity with their time. The Paul Rudolph building at Yale has felicitous, inventive spaces which deify novelty instead of the more solid, structural values we find in great art forms from the Arena Chapel to Cezanne. We would like to believe that the campus buildings that Louis Kahn has designed for the Philadelphia College of Art will come closer to achieving this play of forces and shapes serving the dual purpose of being both practical and spiritual.

Since architectural landmarks are, at best, not likely to happen very often, we might as well assume that reasonably sensitive and sensible responses to specific student building needs are what we can normally hope for. The key question is "What should the ratio be between fixed and flexible spaces?" The oft-repeated demand for flexible spaces results, in part, from an unwillingness to devote the time and thought necessary to make predictions concerning curricula changes that are likely to take place. Among the questions we must ask and answer are: Are photography and the film to become more important than other media that are traditionally more popular? And to what extent will the visual, performing and musical arts merge, as they do in the film and more and more often in the theatre? What provisions should we make now for these possibilities? Or do we play it safe and live from day to day letting circumstance dictate their terms to us?

Other important question marks: Should colleges furnish faculty workshop spaces with the thought of encouraging senior art students to serve as apprentices? Is the master-apprentice relationship still one of the best? Will colleges gradually become less important as learning centers than as learning sources when computers and other electronic hardware become as portable as typewriters, and the distance between students and classrooms and libraries is overcome by new communication advances that can bring learning wherever it is needed?

"The university (of the future) is going to be a really marvelous industry, with tools like individually selected and articulated TV that will permit any student anywhere in the world to select from a vast stockpile of documentaries on any subject and watch it over his own TV set at home. The great teacher won't have to spend his time delivering the same lecture over and over because he will put it on film....." These are the words of the sometimes prophetic Buckminster

Fuller, as quoted in a profile in the January 8, 1966 New Yorker Magazine by Calvin Tomkins.

One thing is certain: the college of the future will bear little resemblance to its counterpart today. There is some indication that undergraduate programs will become more devoted to "general" education, with specialization beginning in the graduate years. The visual arts, long neglected and regarded primarily as forms of recreation and therapy, will become widely respected educational disciplines. A course in painting or photography will not be thought of as less important than science or literature. Basic instruction in the visual arts is certain to be radically revised from kindergarten through college. As improvement takes place at the pre-college level, college programs will be elevated in quality and scope.

What will remain unchangeable is the nature of the artist: his rare and constant talent to see "beauty in a grain of sand"; his indefatigable struggle to live ever closer to the blinding truth of his own vision and to share this with all of us.

INTERVIEWS

Cleveland Institute of Art

Clayton J. Bachtel, Assistant Director
Kenneth Bates, Basic Design, Enameling
George W. Bickford, Vice President, Board of Trustees
Carroll Cassill, Printmaking
Peter Dubaniewicz, Water Color
Mort Epstein, Typography and Graphic Design
Edward Henning, Aesthetics
Roy Hess, Industrial Design
Joseph McCullough, Director
Frances Meyers, Drawing
Lee Ann Miller, Painting
Assen Nicoloff, Librarian
Sudjit Singh, Batik Printing
Brita Sjoman, Weaving, Textile Design
Julian Stanczaic, Painting, Drawing
Frances Taft, Art History
Toshiko Takaezu, Ceramics
8 Students

Massachusetts Institute of Technology

Dr. Lawrence Anderson, Dean, School of Art & Architecture
Dr. Wayne Anderson, Art Historian, Department of Architecture
Dr. Robert Bishop, Dean of Humanities
Caroline Cox, Director, Visitors Bureau
Frank M. Conant, Director, MIT Graphic Arts Center
Dr. Richard Douglas, Chairman, Humanities Department
Dr. Paul Johnson, Assistant Admissions Officer
Dr. Gyorgy Kepes, Professor of Art
Dr. Meyer M. Kessler, Associate Director of Libraries
Dr. William N. Locke, Director of Libraries
Dr. Walter Milne, Executive Assistant to President
Lee Parks, Assistant to Minor White, Chairman, Photography
Robert Preusser, Assistant Professor of Art
Dr. Peter Richardson, Admissions Officer
Dr. O. R. Simha, Director, Institute Planning
Dr. K. R. Wadleigh, Dean of Students
6 Students

Interviews

New York University

Dr. William E. Buckler, Dean, Washington Square College
Dr. Howard Conant, Chairman, Art Education Department
Dr. Robert Corrigan, Dean, School of the Arts
Dr. Morey Fields, Assistant Dean, School of Education
Dr. Arnold N. Goren, Dean, Admissions
Dr. Daniel E. Griffiths, Dean, School of Education
Dr. James M. Hester, President
Dr. Frederic Jackson, Assistant Executive Vice President
Dr. Horst W. Janson, Chairman Art History, Washington Square College
Dr. Milton Schwebel, Dean of Instruction, Guidance, Personnel
Dr. Morris Shamos, Chairman, Department of Physics
Dr. Craig Smythe, Director, Graduate Institute of Fine Arts
Dr. George W. Stone, Dean, Graduate School of Arts & Science
8 Students

Pratt Institute

Albert Christ-Janer, Dean, School of Art
Gene P. Dean, Director of Admissions
Dr. Richard H. Heindel, President
Ray Hendler, Chairman, Evening School
Mrs. Rowena Reed Kostellow, Chairman Industrial Design Department
Lucien Krukowski, Director Foundation Program
Jacob Landau, Chairman, Graphic Design Department
Harold E. Leeds, Chairman, Interior Design Department
Dr. Ransom E. Noble, Jr., Chairman, General Studies
Leon Polanski, Ceramics
Miss Agnes Porter, Coordinator
Dr. Henry P. Raleigh, Chairman, Art Education Department
Judith Reiss, Metal Work
Alvin Ross, Art History
Alan G. Rudolph, Acting Dean, School of Architecture
Ralph Savistano, Director of Public Relations
Philip Schmidt, Chairman, Art History Department
Thomas J. Scott, Coordinator, Practice Teaching
Dr. Roy Senour, Vice President in Charge of Development
Dr. Frederick Whiteman, Associate Dean
Ralph Wickiser, Chairman, Graduate Program
Peter Wronski, Architectural Consultant
6 Students

Interviews

Sarah Lawrence College

Dr. Rudolf Arnheim, Professor, Psychology
Mrs. Alice Bovard, Director of Admissions
Dr. Phillip Gould, Professor of Art History
~~Ezio Martinelli, Sculpture~~
Mrs. Jacquelyn Matfield, Dean
Mrs. Esther Raushenbush, President
Dr. M. L. Richter, Physiology
Dr. Kurt Roesch, Painting
Dr. Harry Rubin, Art History
Ansei Uchima, Printmaking
5 Students

University of Michigan

Dr. Richard L. Cutler, Vice President for Student Affairs
Milton Cohen, Instructor, 3 Dimensional Design
Dr. Paul L. Grigaud, Associate Director, Museum of Art
Dr. Marvin Eisenberg, Chairman, History of Art
Dr. Stanford Ericson, Director, Center for Research in Learning & Teaching
Dr Harlan Hatcher, President
Dr. Donald Hall, Poet
Robert I. Iglehart, Chairman, School of Design
Dr. Abraham Kaplan, Chairman, Department of Philosophy
Aare Lahti, Chairman, Industrial Design
Dr. Thomas Larkin, Director, Art Education
Reginald Malcolmson, Dean, School of Architecture & Design
Dr. George Manupelli, 3 Dimensional Design
Dr. Wilbert J. McKeachie, Chairman, Psychology
John G. McKevitt, Assistant to the Vice President
Hazan Schumacher, Assistant Director, TV Center
Allan F. Smith, Vice President for Academic Affairs
Dr. Frederick Wagman, Director of Libraries
Emil Weddige, Graphics
4 Students

Additional Authorities

Frank Bowles, Director, Ford Foundation Program in Education
Dr. Charles De Carlo, Director, Automation IBM
Dr. Gibson Danes, Dean, School of Art & Architecture, Yale
Dr. Ronald Day, Director Art Education, Cleveland Board of Public Education
Dr. Robert Dentler, Deputy Director, Center for Urban Education, New York City
Fritz Gutheim, Architectural Critic, Washington, D.C.
Ron Haase, Architectural Associate, Educational Facilities Laboratory
Philip Johnson, Architect
Gerald Nordland, Director, Washington Gallery of Modern Art
Miss Olive Riley, Director of Art Education, New York City Board of Education
Mrs. Anita Rogoff, Art Education, Western Reserve University
Frank Rozika, Director, Parsons School of Design
Dr. Herbert W. Trotter, Vice President, in charge of Education, General Telephone & Electronics
Tom Karavolos, Industrial Designer

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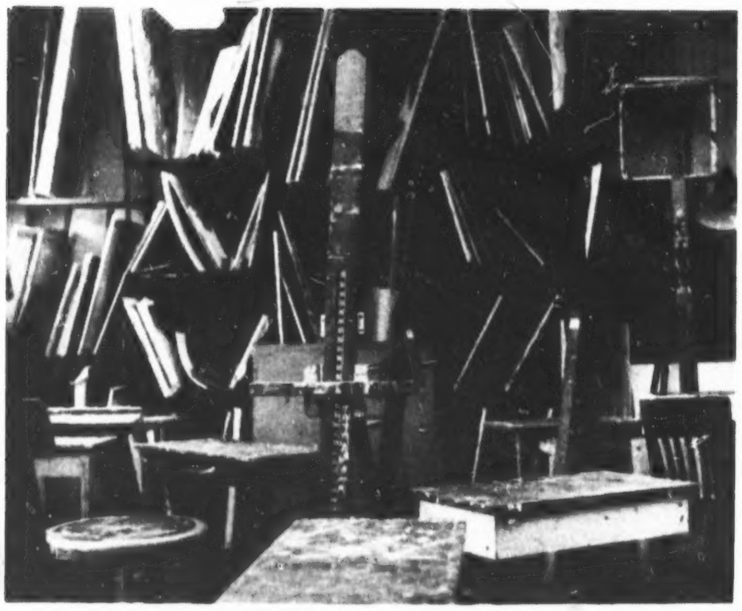
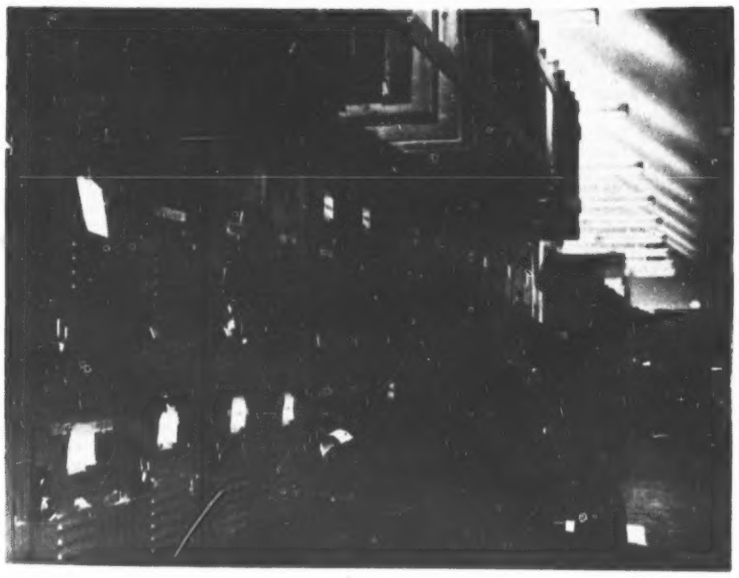
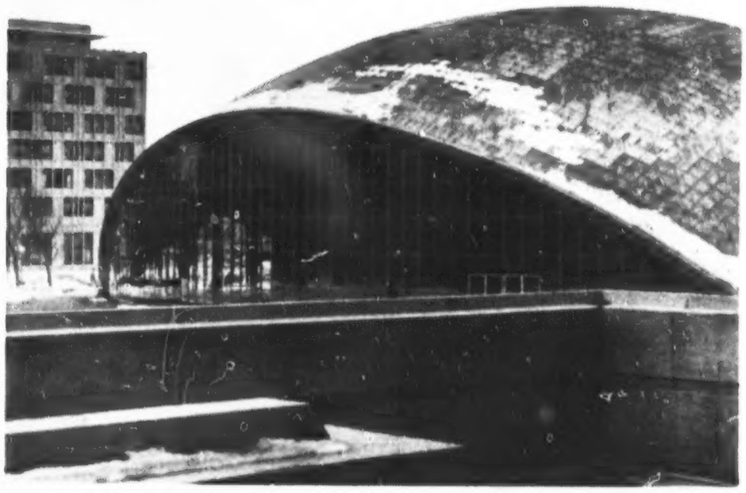
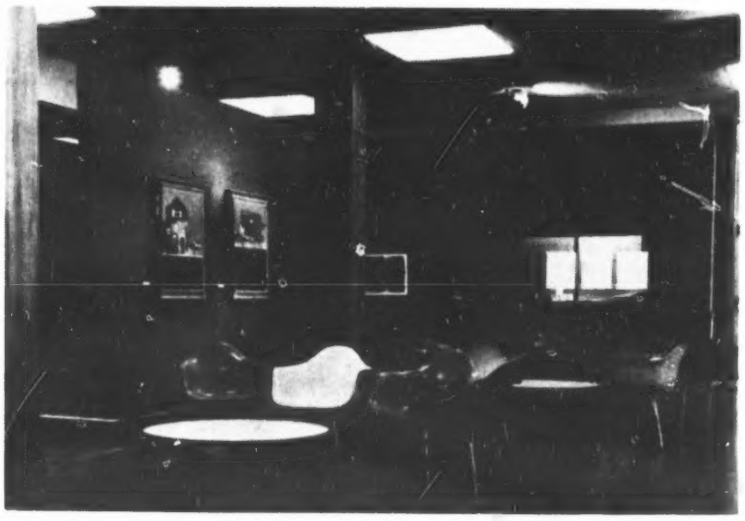
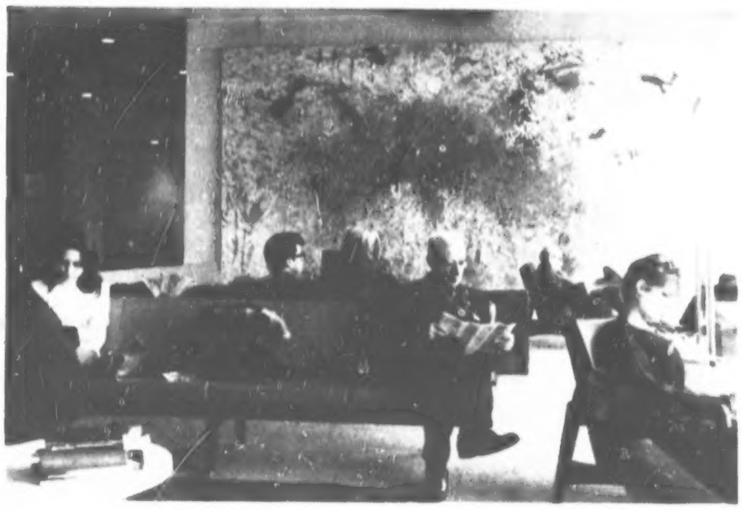










Left, top and bottom

Typically inadequate storage and locker spaces

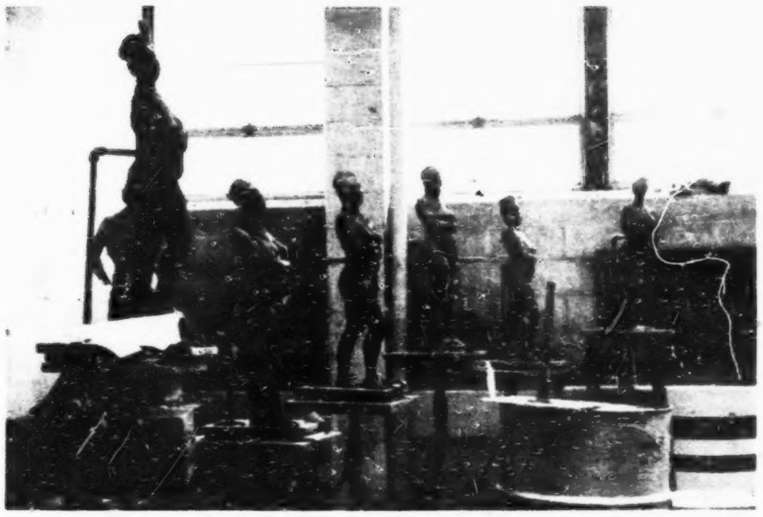
Right, top to bottom

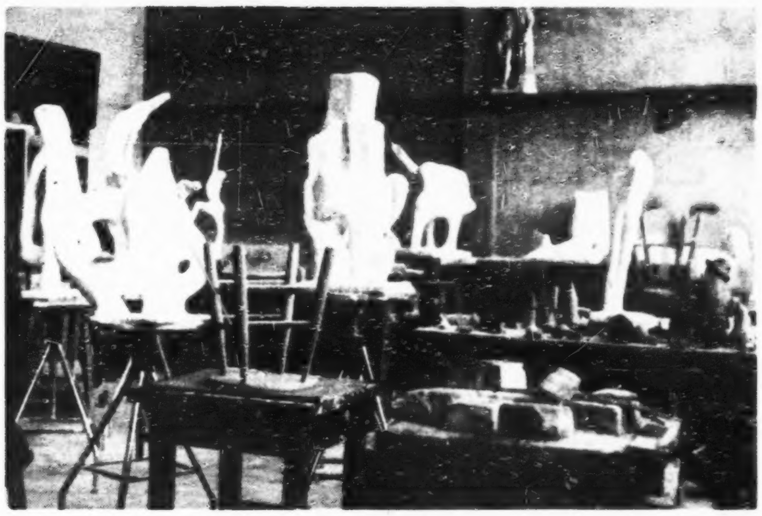
Saarinen auditorium, MIT, as seen from Student Union

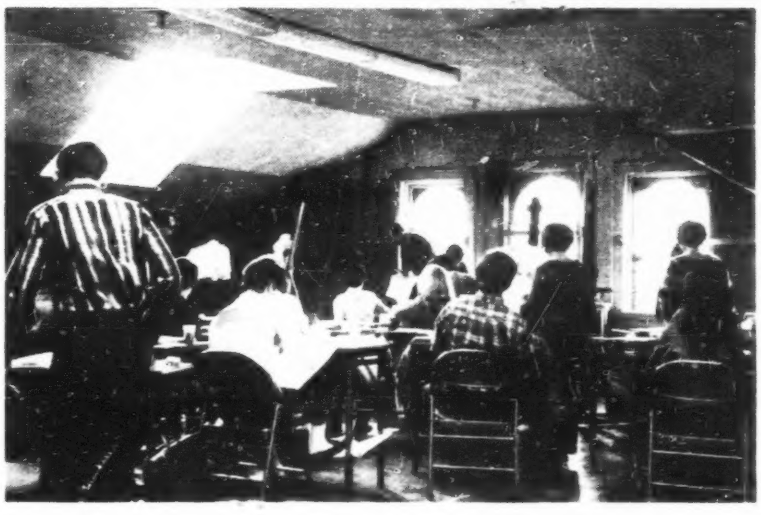
Exhibition and student lounge area, Cleveland Institute of Art

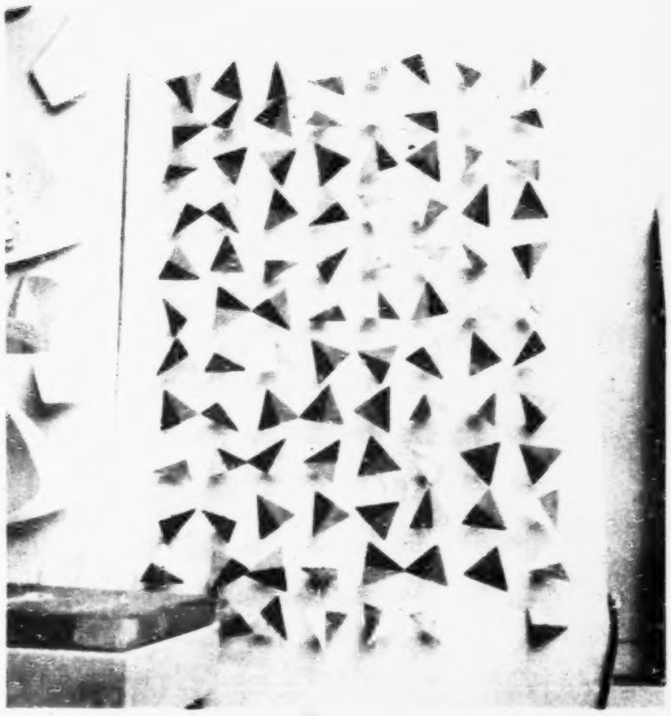
Stairwell, foundation program building, Pratt Institute

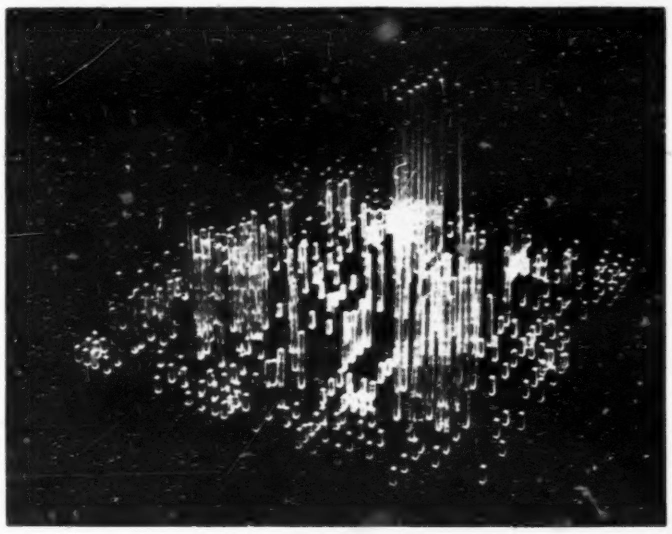
Lobby, Loeb Student Center, NYU Painting in background part of NYU art collection











Left, top and bottom

Corner of a large sculpture studio
Cleveland Institute of Art

Sculpture studio, Sarah Lawrence

Ceramics workshop, Cleveland

Foundation program studio, Pratt

Right, top and bottom

New media at MIT
Three dimensional study
using magnetized discs

Light study in plexiglass